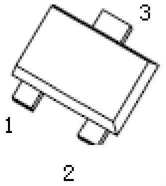
JCST

JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

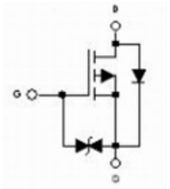
SOT-723 Plastic-Encapsulate MOSFETS

CJ3139K P-Channel MOSFET

SOT-723



1. GATE
2. SOURCE
3. DRAIN



FEATURES

- Lead Free Product is Acquired
- Surface Mount Package
- P-Channel Switch with Low R_{DS}(on)
- Operated at Low Logic Level Gate Drive

APPLICATION

- Load/Power Switching
- Interfacing, Logic Switching
- Battery Management for Ultra Small Portable Electronics

MARKING: KD

Maximum ratings (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current (note 1)	I_D	-0.66	A
Pulsed Drain Current (t_p=10μs)	I_{DM}	-1.2	A
Power Dissipation (note 1)	P_D	150	mW
Thermal Resistance from Junction to Ambient (note 1)	$R_{\theta JA}$	833	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~+150	℃
Lead Temperature for Soldering Purposes(1/8” from case for 10 s)	T_L	260	℃

Electrical characteristics (T_a=25℃ unless otherwise noted)

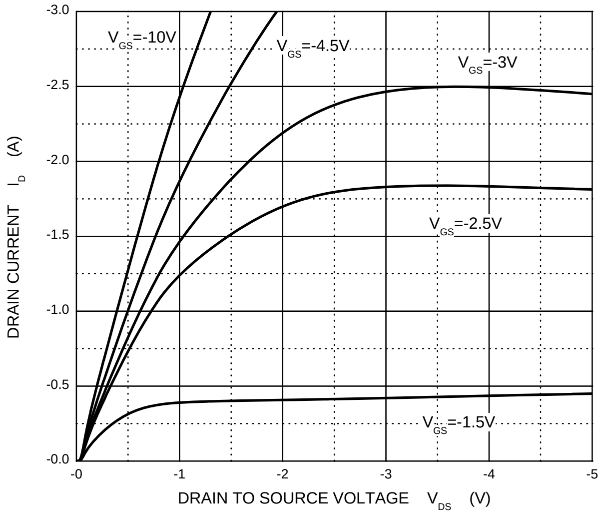
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC CHARACTERISTICS						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-20V,V_{GS} = 0V			-1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±12V, V_{DS} = 0V			20	μA
Gate threshold voltage (note 2)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-0.35		-1.1	V
Drain-source on-resistance (note 2)	$R_{DS(on)}$	V_{GS} =-4.5V, I_D =-1A			520	mΩ
		V_{GS} =-2.5V, I_D =-0.8A			700	mΩ
		V_{GS} =-1.8V, I_D =-0.5A			950	mΩ
Forward transconductance (note 2)	g_{FS}	V_{DS} =-10V, I_D =-0.54A		1.2		S
Diode forward voltage	V_{SD}	I_S=-0.5A, V_{GS} = 0V			-1.2	V
DYNAMIC CHARACTERISTICS (note 4)						
Input capacitance	C_{iss}	V_{DS} =-16V,V_{GS} =0V,f =1MHz		113	170	pF
Output capacitance	C_{oss}			15	25	pF
Reverse transfer capacitance	C_{rss}			9	15	pF
SWITCHING CHARACTERISTICS (note 4)						
Turn-on delay time (note 3)	$t_{d(on)}$	V_{GS}=-4.5V,V_{DS}=-10V, I_D =-200mA,R_{GEN}=10Ω		9		ns
Turn-on rise time (note 3)	t_r			5.8		ns
Turn-off delay time (note3)	$t_{d(off)}$			32.7		ns
Turn-off fall time (note 3)	t_f			20.3		ns

Notes :

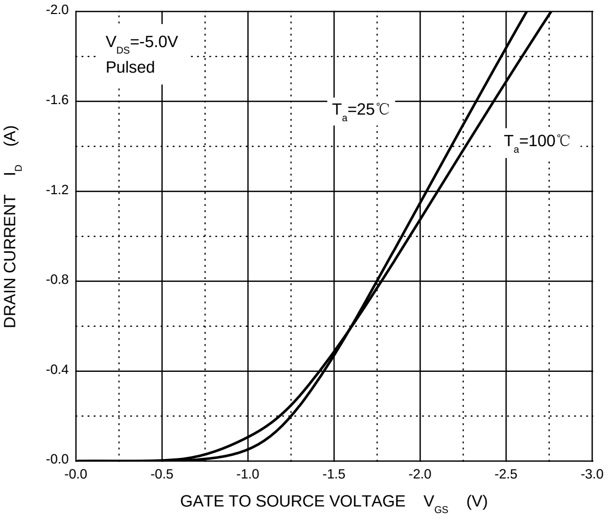
1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse Test : Pulse Width=300μs, Duty Cycle=2%.
3. Switching characteristics are independent of operating junction temperatures.
4. Guaranteed by design, not subject to producting.

Typical Characteristics

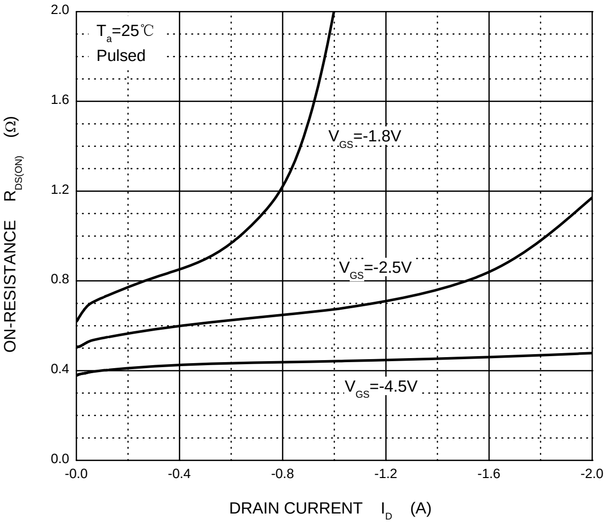
CJ3139K



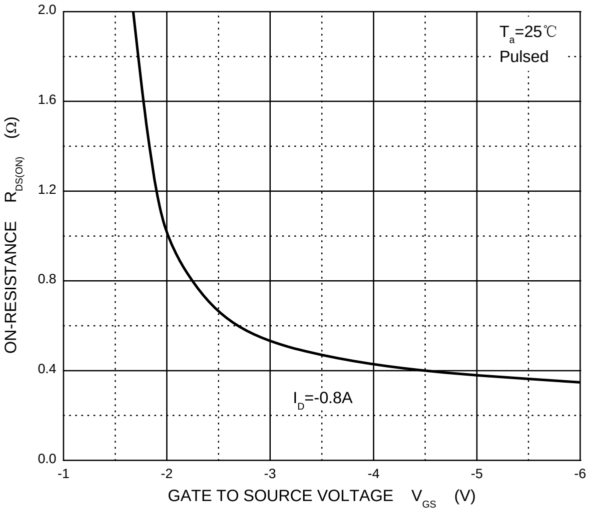
Output Characteristics



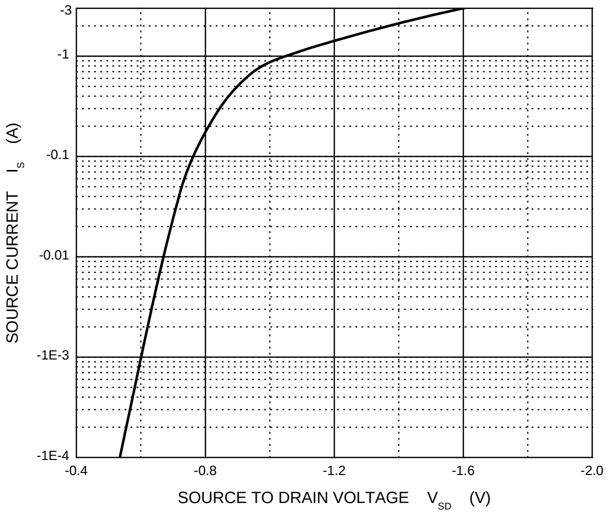
Transfer Characteristics



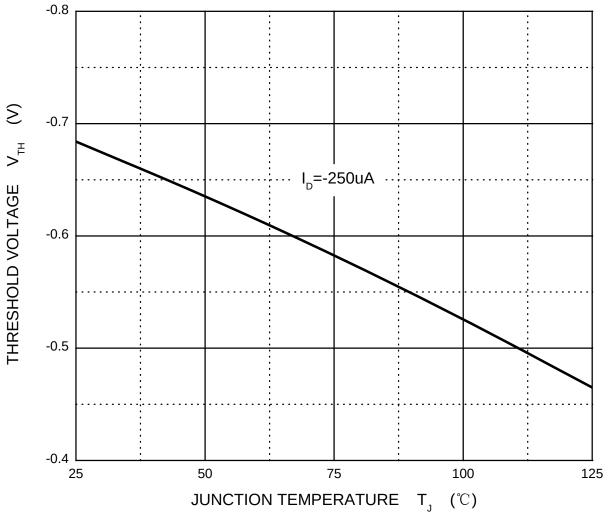
$R_{DS(ON)}$ —— I_D



$R_{DS(ON)}$ —— V_{GS}



I_S —— V_{SD}



Threshold Voltage